



Lesson 9.5 Urban Animals

Curriculum for Sustainability

Topic II: This Land Is Our Land

Module 9: Cities, Homes, Urban Development

Concepts:

There are many animals that live in the urban environment alongside humans.

Animals that live in habitats in the city face different challenges than those that live in the wild. (Many of these challenges are due to the way people have modified the land.)

Terminology

Habitat: the place where an organism lives

Urban Environment: the land, air, water, and living things that occupy and affect organisms within a city.

Background information

- Greenville SC is located in the piedmont ecoregion of South Carolina. The natural landscape types in this area include hardwood forest, oak hickory forest, pine-oak forest, savannah, bottomland hardwood forest, and cove forest.
- Much of the land in this area has a long history of use and development by people, from early clearing and agricultural use to the current mix of industrial, agricultural, and urban habitats that dot the landscape. Urban and suburban development in the piedmont has been and continues to be one of the major threats to populations of animals and plants native to the region.
- Urban development alters the landscape in a variety of ways such as
 - Habitat Alteration
Habitat alteration occurs when people change the land in a way that affects the organisms living there. Habitat destruction and habitat fragmentation are types of habitat alteration.
 - Habitat destruction
Habitat destruction occurs when a habitat is completely removed. An example would be if a building was built in a place where a small wetland used to be. There would be nothing left of that wetland, and animals and plants that lived there would lose their habitat completely.



- Habitat fragmentation
Habitat fragmentation occurs when suitable habitat is broken into pieces by some sort of boundary such as a road or a dam. If fragments are large enough, animals and plants may still be able to survive, depending on their range requirements. If the habitat fragments are small, species that require larger ranges either cannot survive there any longer or must travel between fragments. Habitat fragmentation is a very common form of habitat alteration in urban environments.
 - Altered hydrology
Changes in the way the land is shaped, soil structure, changes in vegetation, and other consequences of development all affect the way that water moves through an ecosystem (the hydrology of an ecosystem). By altering the rate and way that plants take up water, the rate that water infiltrates the ground, and rates of evaporation and transpiration, development can have a drastic effect on hydrology.
 - Alteration or loss of fire regime
Historically, many of the ecosystems in the Southeast experienced relatively frequent fires, mostly as the result of lightning strikes. As a consequence, many of the plants and animals that live in these ecosystems have adapted to frequent fires, some so much so that we term them “fire dependent.” When people develop an area, they generally alter the frequency and scale of fire events as a consequence of development.
- There are a variety of places where animals may live in the urban environment. These urban habitats may be similar to the habitat the animal may live in in the wild, or they may be very different. Some examples of urban animal habitats include: ornamental pools, gardens, yards, ponds, road sides, abandoned lots, back yards, parks, trails, and buildings.
 - Animals that live in urban environments must deal with a variety of challenges. The animals that can survive in the urban environment have adapted in a variety of ways to live alongside humans and deal with landscape changes associated with development.
 - Some examples of the challenges animals living in the urban environment face include:
 - Roads –
 - As a barrier to movement
 - As a source of mortality.
 - Buildings –
 - As a barrier to movement or flight



- As a possible shelter or nest site
- Finding food
 - Scarcity of natural food
 - Crossing roads or lawns to find food
 - Foraging in trash = plentiful food for some animals
- Raising young
 - Must find den/nest/spawn sites
- Dams
 - Altered Hydrology
 - Barrier to movement for aquatic organisms
 - Altered water temperature downstream of dams
- Pollution
 - Air pollution
 - Water pollution
 - Trash
- Soil compaction, erosion, disturbance
- Landscaping
 - Use of non-native plants in landscaping may reduce shelter sites and availability of suitable food
 - Short grass may look pretty to people, but imagine being a mouse or a beetle and having to cross a cropped lawn to forage. Predators may enjoy the benefits
 - Chemicals used in maintaining landscaping may be dangerous
- People

This is not a complete list, but should be enough to begin a thought provoking discussion of the differences between urban animal habitats and natural animal habitats.

More background information about habitats:

<http://www.fi.edu/tfi/units/life/habitat/habitat.html>

Lesson or Activity:

Introduction: Ask each student to introduce themselves and tell the group their favorite animal and its habitat (place where that animal lives).

Follow the introduction with the activity: Urban Animal Charades (Cards on pages 5 and 6)

- Divide the class into two groups. Have the groups pick team names and explain the rules. They can choose an animal to act out for 5 points OR they can choose an animal and an action (what the animal is doing) for 10 points. A member of the team will come up and pick a card then act out the animal or the animal and



action that is on the card. While they are acting, their team will have 2 minutes in which to guess what they are. If they do not guess correctly, at the end of 2 minutes, the other team has a single chance to steal the points. If the card is an animal and action, they must get both the animal and the action correct in order to receive the points. As in normal charades, they may not use any sounds.

Following the activity, prompt discussion by asking the following questions (could also be used as writing prompts):

1) Think of an animal that you acted out in charades. What type of habitat might it live in in the city?

2) Would your animal's urban habitat be different than its natural habitat in the wild? How would they differ?

3) What challenges do you imagine that your animal may face living in the city that it wouldn't have to face living in its natural environment?

4) Are there any advantages for animals living in the city over living in the wild?

Praying Mantis	Owl
Chipmunk	Wasp
Fish	Mouse
White-Tailed Deer	Snake
Lizard	Caterpillar
Opossum	Butterfly
Vulture	Hawk
Bat	Cockroach

Woodpecker tapping on a tree to find food	Duck diving for food
Raccoon knocking over a trash can	Bee pollenating a flower
Turtle hiding in its shell	Rabbit eating lettuce
Spider building a web	Squirrel burying acorns
Bird building a nest	Robin eating worms
Hummingbird sipping nectar from a flower	Spider trapping a fly
Pigeon eating seeds in the park	Skunk spraying a predator